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AMENDMENT TO THE CLAIMS:

This listing of claims will replace all prior versions of claims in the application:

LISTING OF CLAIMS:

- 1 1. (Cancelled) A magnetic head comprising:  
2 a magnetoresistive sensor having first and second laterally opposed sides defining  
3 a track width; and  
4 an in stack bias layer having a portion formed within said track with and first and  
5 second outer portions extending laterally outward beyond said track width.
- 1 2. (Currently amended) A magnetic head comprising:  
2 a magnetoresistive sensor having first and second laterally opposed sides defining a track  
3 width;  
4 an in stack bias layer having a portion formed within said track width; and  
5 ~~A magnetic head as in claim 1, wherein said bias layer further comprises~~ first and second  
6 magnetic layers adjacent to the in stack bias layer, the first and second magnetic layers  
7 being separated from one another by a non-magnetic coupling layer and said first and  
8 second magnetic layers having magnetizations that are antiparallel coupled across said  
9 non-magnetic coupling spacer layer.

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1 3. (Currently amended) A magnetic head as in claim 2 [[1]], wherein said first and  
2 second magnetic layers comprise CoPtCr.

1 4. (Currently Amended) A magnetic head as in claim 2 [[1]], wherein said non-  
2 magnetic coupling spacer layer comprises Ru.

1 5. (Currently amended) A magnetic head as in claim 2 [[1]] further comprising a  
2 magnetic free layer, and wherein said in stack bias layer is ~~magnetic hard bias material,~~  
3 ~~disposed substantially within said track width and disposed between one of said first and~~  
4 second magnetic layers and said free layer.

1 6. (Currently amended) A magnetic head as in claim 5 [[1]] further comprising a  
2 nonmagnetic spacer layer disposed between said bias layer and said free layer.

1 7. (Currently amended) A magnetic head as in claim 2 [[1]] wherein said first and  
2 second magnetic layers ~~of said bias layer~~ each have a thickness of 20 to 40 angstroms.

1 8. (Currently amended) A magnetic head as in claim 2 [[1]] further comprising a  
2 seed layer formed adjacent one of said first and second magnetic layers.

1 9. (Cancelled) A current in plane magnetoresistive sensor, comprising:  
2 a magnetic free layer having a magnetization biased parallel to an air bearing  
3 surface (ABS);  
4 a magnetic pinned layer having a magnetization pinned perpendicular to said  
5 ABS;  
6 a non-magnetic spacer layer disposed between said free layer and said pinned  
7 layer;  
8 said free layer, pinned layer, and spacer layer having first and second laterally  
9 opposed sides defining a track width;  
10 a magnetic bias layer formed adjacent said free layer within said track width;  
11 a bias pinning layer formed adjacent said bias layer opposite said free layer within  
12 said track width, said bias pinning layer extending laterally outward substantially  
13 beyond said track width.

1 10. (Currently Amended) A current in plane magnetoresistive sensor, comprising:  
2 a magnetic free layer having a magnetization biased parallel to an air bearing  
3 surface (ABS);  
4 a magnetic pinned layer having a magnetization pinned perpendicular to said  
5 ABS;  
6 a non-magnetic spacer layer disposed between said free layer and said pinned  
7 layer;  
8 said free layer, pinned layer, and spacer layer having first and second laterally  
9 opposed sides defining a track width;

10 a magnetic bias layer formed adjacent said free layer within said track width;  
11 a bias pinning layer formed adjacent said bias layer opposite said free layer within  
12 said track width, said bias pinning layer extending laterally outward substantially  
13 beyond said track width;

14 ~~A magnetoresistive sensor as in claim 9,~~ wherein said bias pinning layer further  
15 comprises first and second magnetic layers formed of a high coercivity magnetic  
16 material, and separated from one another by non-magnetic coupling layer, said first and  
17 second layers of high coercivity material having magnetizations anti-parallel coupled  
18 with one another.

1 11. (Original) A magnetoresistive sensor as in claim 10 wherein said first and second  
2 high coercivity magnetic material layers comprise CoPtCr.

1 12. (Currently amended) A magnetoresistive sensor as in claim 10 wherein said first  
2 and second high coercivity material layers each have a thickness of between 20  
3 and 40 angstroms ~~angstroms~~.

1 13. (Original) A magnetoresistive sensor as in claim 10, wherein said non-magnetic  
2 coupling layer comprises Ru.

1 14. (Amended) A magnetoresistive sensor as recited in claim 10 [[9]] further  
2 comprising a seed layer formed adjacent said bias pinning layer opposite said bias layer.

1 15. (Currently amended) A magnetoresistive sensor as in claim 14 ~~further~~ wherein  
2 said seed layer comprises Cr.

1 16. (Original) A magnetoresistive sensor as in claim 14 wherein said seed layer  
2 comprises Cr and wherein said seed layer has a thickness of from 20 to 40  
3 angstroms.

1 17. (Currently Amended) A magnetoresistive sensor as in claim 10 [[9]] further  
2 comprising first and second electrically insulating side walls formed at said first and  
3 second sides defined by said free layer, said pinned layer, and said spacer layer.

1 18. (Original) A magnetoresistive sensor as in claim 17 wherein said first and second  
2 electrically insulating side walls comprise alumina (Al<sub>2</sub>O<sub>3</sub>).

1 19. (Currently amended) A magnetoresistive sensor as in claim 17, further  
2 comprising at least one magnetic shield ~~having first and side shielding portions~~ extending  
3 into a sensor stack height region, and being formed adjacent a portion of said electrically  
4 insulating side walls and extending laterally outward therefrom.

20. (Original) A magnetoresistive sensor as in claim 10 wherein said first and second magnetic layers of said bias pinning layer have substantially the same magnetic thickness.